

OUR BOOK SHELF.

Vergleichende Morphologie der Pflanzen. I. Theil, mit 200 i.d. Text gedr. Abbild. u. zwei lith. Doppeltafeln. By Dr. Jos. Velenovský. Pp. 277+plates. (Prag: Fr. Rivnác, 1905.)

DR. VELENOVSKÝ has written the earlier portion of a work which will be found of no small interest to botanists, not only because the author has brought together a number of new observations of his own, but because he deals with the whole mass of facts from a definite point of view. Probably, as he himself hints in the preface, his views may not command general acceptance, and we confess to experiencing a certain sense of disappointment after reading the book. The point of view which the author adopts is, it seems to us, too rigid and formal. Morphology has really outgrown the stage of pure formalism. We have come to recognise that the task of trying to understand why and how development has followed on the lines one can actually trace, is overshadowing the purely formal abstractions which used to constitute morphology.

Twenty years ago it was the fashion to divorce physiological notions from morphological concepts. At the present time, probably most botanists have an inkling, if not a conviction, that morphological "laws" really do resemble those of the Medes and Persians. The "laws" in both cases last just so long as they can continue to be tolerated. With increased knowledge the bonds of the old laws are loosened, and fresh working theories become needed to comprehend the increased range of intellectual vision.

But it must not be thought that the foregoing remarks are intended to depreciate the value of the book before us, for it appears to us to be one that can be read with considerable interest and profit. Much of the author's railing against certain practices which are not uncommon at the present time is justifiable, although he is apt perhaps to overstate the case.

"In modern times hardly anything but a monograph is appreciated; each author is acquainted with his own particular genus, or it may be, family, and he cares for nothing else. . . ."

But when Dr. Velenovský leaves generalities and comes to closer quarters with his subject-matter, he is on ground where he will meet with less opposition, albeit his methods may awaken some surprise. In these days laborious description of anatomical detail too often replaces an attempt to give a comprehensive account of the plants themselves. The author, however, scarcely devotes any space at all to internal structure, and finds room thereby to give a more complete account of the range of external variation within the cryptogamic groups to which this volume is devoted; and it is not impossible that some of his readers may experience a kind of mild shock at finding many unfamiliar forms included in a group which they have hitherto only known through one or two laboratory "types."

The book contains many new illustrations, and it is not unlikely to meet with a better reception than its author seems to think it will obtain. J. B. F.

De Vormen der Aardkorst: Inleiding tot de Studie der Physiographie. By J. van Baren. Pp. viii+232. (Groningen: J. B. Wolters, 1907.)

This little book attempts, in the course of 207 pages, to cover the whole ground of physical geology, and to give an account of the most important observations and discoveries made in this branch of science up to the year 1905. It is necessarily, therefore, somewhat sketchy, but ample compensation for this will be found in the freshness of its information, whether conveyed by illustrations or letterpress. The illustrations are

particularly good, and the only one which strikes us as distinctly old-fashioned is the diagram showing the distribution of seismic areas.

In the opening pages the student is introduced to the meaning of elementary technical terms, with their equivalents given in English, French, and German. These would be more useful if they were more exact; the English for "Streichen" is not "direction," but "strike," and an "overthrust" is not identical with either an inclined or a recumbent fold. It is singular that many Continental geologists, notwithstanding their apparent familiarity with the structure of north-western Sutherland, should still seem to find a difficulty in grasping the real significance of our "overthrust."

The author does not attempt to found any system of his own, and in disputed questions generally contents himself with summarising the opinions of others; hence, in treating of the internal state of the earth, the important bearing of recent seismological observations is overlooked, for if distortional waves do really traverse the whole mass of the planet, we need no longer give serious attention to theories which involve a gaseous interior.

The origin of coral atolls is briefly discussed, and the boring in Funafuti is referred to as furnishing a proof that in certain cases Darwin's theory holds good; on the other hand, it is asserted that this theory will not apply to the atoll-like reefs of the West Indies. This latter statement would seem to show that the author cannot have read Darwin's "Coral Reefs" with sufficient care, for Darwin himself expressly excluded these reefs from his explanation. In this oversight, however, the author by no means stands alone.

To the general reader, whose interest is restricted to results, this work will provide a useful epitome, nor is it without a claim upon the advanced student; it brings together many new facts hitherto scattered and disconnected, and builds them into the edifice of his science.

Nests and Eggs of Birds found Breeding in Australia and Tasmania. By A. J. North. Vol. ii., part ii. (Australian Museum, 1907.)

THIS part of the second volume of the new edition of Mr. North's excellent work on the nests and eggs of the birds found breeding in Australia and Tasmania describes the greater portion of the large and important family Meliphagidae, commenced towards the latter end of the preceding part, and the families Nectariniidae, Zosteropidae, Dicædæ, and Pardalotidae. The figures of the eggs, which are of the natural size, were reproduced by heliotype process at the Government Printing Office from photographs of specimens. The letterpress contains descriptions of the birds, their nests and eggs, and a general account of their life-history. The excellent detailed description of the birds, the copious field notes, and the beauty of the illustrations all call for notice. This important and most interesting work is a publication of the Australian museum, beautifully produced, and at a very low price. In the present part we have 138 pages of letterpress (large 4to), three plates (one showing the nest of Lewin's honey eater *in situ*, and the other two comprising sixty-six figures of eggs), besides illustrations in the text of birds, nests, and breeding haunts, for 7s. 6d.

Grundzüge der Tierkunde für höhere Lehranstalten. By Prof. Karl Smlan. Pp. 304; illustrated. (Leipzig: G. Freytag; Vienna: E. Tempsky, 1907.) Price 4 marks.

THIS work, which is intended as a companion to the author's "Grundzügen der Pflanzenkunde," is more attractive than the generality of school text-books on

account of being illustrated by thirty coloured plates, which are excellent examples of the three-colour process. Not only are they for the most part good pictures of the animals they purport to represent, but they also show in most cases the natural surroundings of the respective species, so far as these can be reproduced with fidelity to nature. Unfortunately, in one instance that has come under our notice the wrong species has been depicted. We refer to the plate of giraffes and zebras facing p. 42, where the animal purporting to be the true or mountain zebra (*Equus zebra*) is the northern race of the bontequagga, or Burchell's zebra (*Equus burchelli granti*). Had the true zebra been depicted, the plate would then have been wrong, as showing a mountain animal on the open plains. The text includes a brief but well-compiled survey of the whole animal kingdom, from Primates to Protozoa, including sporozoans, with some mention of extinct forms, and the work as a whole appears thoroughly suited to its purpose.

R. L.

Précis des Caractères génériques des Insectes, disposés dans un Ordre naturel par le Citoyen Latreille. A Paris, chez Prévôt, Libraire, Quai des Augustins, et à Brive, chez F. Bourdeaux, Imprimeur Libraire. A Brive, de l'Imprimerie de F. Bourdeaux, an 5 de la R. [1796]. Pp. xiv + 208. (Imprime à 200 Exemplaires par A. Hermann, n.d.) Price 7 francs.

This is a reprint of a very rare book, which is seldom to be found even in the best entomological libraries. It commences with a table of the fourteen classes into which the author divides insects (understanding by that term Arachnida, Crustacea, and Myriopoda, as well as Hexapoda), followed by systematic characters for 351 genera recognised by Latreille, one or two others, described by other authors, being passed over as at present unknown to him. Several very familiar genera, such as *Ypsolophus* and *Adela*, are characterised in this book for the first time, but without indication of types, for which reference must be made to Latreille's later works. It is always unsatisfactory to entomological authors to be in doubt respecting the actual contents of a book they only know at second-hand, and we are glad that this scarce book has now been rendered accessible to them in a complete (and, we hope, accurate) reprint.

The Metric and British Systems of Weights, Measures and Coinage. By Dr. F. Mollwo Perkin. Pp. 83; with 17 diagrams. (London: Whittaker and Co., 1907.) Price 1s. 6d.

DR. PERKIN here provides a simply written and clearly expressed account of metric measures of length, area, volume and weight, and, in addition, treats of specific gravities, temperature measurements, and money. As Lord Kelvin has said, "our weights and measures are time-wasting and brain-wearing," and all attempts to familiarise British boys with the simplicity and convenience of the decimal system deserve encouragement. This small volume should prove useful in both day and evening schools, and all engaged in manufacture and commerce would derive advantage from its study.

The Story of Scraggles (A Sparrow). By George W. James. Illustrated from drawings by Sears Gallagher and from photographs. Pp. 88. (London: Chatto and Windus, 1907.) Price 2s. 6d.

THE greater part of this booklet is in the form of the autobiography of an ailing song-sparrow, which could not fly, and was kept in a house for three months. The story, which purports to represent the bird's thoughts and feelings, will probably appeal to little girls, and encourage them to be kind to animals.

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LETTERS TO THE EDITOR.

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Specific Stability and Mutation.

MR. R. H. LOCK at the close of his letter in NATURE of October 17 (vol. lxxvi., p. 616) makes a remark which, after some consideration, still perplexes me. The question involved is so interesting and, indeed, important, that I feel sure that many of your readers would be glad to know the grounds, doubtless not without weight, which led him to it. I quote the passage:—"that natural conditions lead to the obliteration of a host of mutations is as fair a deduction from the fact that such mutations appear under cultivation as the current deduction that the conditions of cultivation actually cause the occurrence of this kind of variation. We have the testimony of de Vries and others that the former process actually takes place. That the latter process does so is an assumption which still lacks the support of facts."

It contains two propositions:—(1) mutations appear under cultivation; (2) that the conditions of cultivation actually cause the occurrence of this kind of variation . . . is an assumption which still lacks the support of facts. It is the latter on which I think some discussion would probably be illuminating. At first sight the two propositions look contradictory. It is possible, however, that Mr. Lock is using "cause" in a very technical sense. But as Mill remarks, "in practice that particular condition is usually styled the cause, whose share in the matter is superficially the most conspicuous." Now, our knowledge of mutations is almost exclusively drawn from cultivated plants. In such cases cultural conditions are obviously an inseparable antecedent to mutations. What I do not understand is why it is an "assumption" to state that there is a causal nexus between the effect and the conditions.

To avoid ambiguity, I may explain that by "variation" I mean insensible and continuous organic change; by "mutation," that which is large, palpable, and discontinuous.

I believe that in nature variation never ceases, and yet "species" do not perceptibly vary. I pointed out some years ago, in a discussion at the Royal Society, the explanation of this seeming paradox. What we mean by a species is an abstraction which has no concrete existence. It is the mean or average of a host of varying individuals. It will be hardly contested nowadays that, so long as the conditions remain constant, the species remains unchanged. As has been frequently pointed out, the Egyptian flora furnishes a remarkable illustration of the fact over a long period of time. Plant remains from tombs believed to be 4000 years old differ in no respect from the species now living to which they belong, and the mere fact of their preservation shows that the physical conditions have undergone no change. To this persistence under constant surroundings I have given the name of "specific stability."

That mutations occur and exist is obvious to everyone. But that they are of frequent occurrence under purely natural conditions is, I think, unsupported by evidence, and, if they do occur, I agree with Darwin that it may be doubted if they "are ever permanently propagated in a state of nature" ("Origin," fifth edition, p. 49). The reason is that an organism is so nicely adjusted to its surroundings that it is in the highest degree improbable that a sudden and extreme structural change would fit in with them.

If species arise in nature by discontinuous variation or mutation, one would expect to see some evidence of their doing so; but in the British flora I can only call to mind a very few instances. There is a form of *Chelidonium majus* with lacinate leaves and petals. It is said to have first appeared at Heidelberg in 1590; according to Hooker it is only known in cultivation. There are two striking mutations of *Plantago major*, one with a paniculate inflorescence, the other with leafy bracts, which reappear